

**PARASCHIV-MUNTEANU, Iuliana; STATE, Luminița.** *CLASSIFICATION USING KERNEL SVM*

**Abstract:** The paper aims to present the results of the research toward improving the performance expressed in accuracy and time complexity of SVM implementations. The implementation of the search process for soft margin hyperplane uses a slight modification of Sequential Minimal Optimization (SMO) algorithm introduced by Platt in 1998-1999, to solve the quadratic programming problem involved in the learning process. The SMO is a simple algorithm that quickly solves the SVM problem by decomposing the overall quadratic programming problem into smaller quadratic programming sub-problems without any extra matrix storage and without invoking an iterative numerical routine for each sub-problem. The proposed method was tested on simulated data generated randomly from normal 2-dimensional distributions.

**Keywords:** Support Vector Machine, classification, kernel functions